

What is claimed is:

1. A vacuum arc deposition apparatus comprising:

a vacuum chamber;

an arc evaporation source for evaporating a cathode

5 material from a cathode due to vacuum arc discharge, said

arc evaporation source including

a cathode holder made from a conductor for holding  
said cathode,

a plurality of cathodes attached to said cathode  
10 holder,

a trigger electrode for arc ignition,

a trigger drive unit for performing an operation  
to change over a position of said trigger electrode to thereby  
position said trigger electrode in front of a desired one of  
15 said plurality of cathodes and an operation to move said trigger  
electrode toward or to get apart from said desired cathode in  
said changed-over position,

a shutter capable of covering fronts of all of said  
cathodes except said desired cathode, and

20 a shutter drive unit for performing an operation  
to move said shutter to thereby change over a cathode not covered  
with said shutter;

an arc power supply connected between said cathode of  
said arc evaporation source and an anode corresponding to said  
25 cathode with said cathode on a negative side; and

a changeover control unit for making a changeover control to control said shutter drive unit and said trigger drive unit so as to change over a cathode not covered with said shutter while positioning said trigger electrode in front of said cathode not covered with said shutter.

2. A vacuum arc deposition apparatus according to Claim 1, further comprising:

an arc current integrator for integrating an arc current flowing into said arc power supply via said cathode holder during current-carrying time so as to obtain an arc current amount,

wherein said changeover control unit performs said changeover control whenever said arc current amount obtained

by said arc current integrator exceeds a predetermined reference value.

3. A vacuum arc deposition apparatus according to Claim 1, wherein said shutter is made from metal, and said vacuum arc deposition apparatus further comprising:

a resistor connected between said shutter and said anode; an ampere meter for measuring a current flowing into said shutter via said resistor; and

a shut-down control unit for making a shut-down control for shutting down an output of said arc power supply when said current measured by said ampere meter exceeds a predetermined

reference value.

4. A vacuum arc deposition apparatus according to Claim  
1, wherein said vacuum chamber serves as said anode.

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5. A vacuum arc deposition apparatus according to Claim  
1, wherein the plurality of cathodes are two cathodes, and said  
shutter is larger than a surface, from which the cathode material  
is evaporated, of one of the two cathodes so that said shutter  
10 cover the one of the two cathodes.

6. A vacuum arc deposition apparatus according to Claim  
1, wherein said shutter has an opening portion which is larger  
than a surface, from which the cathode material is evaporated,  
15 of one of the plurality of cathodes, and said shutter covers  
surfaces, each from which the cathode material is evaporated,  
of the other cathodes.

7. A vacuum arc deposition apparatus according to Claim  
20 1, wherein said trigger electrode and said shutter are disposed  
with different distances from surfaces of the cathodes each  
from which the cathode material is evaporated.

8. A vacuum arc deposition apparatus according to Claim  
25 1, wherein said plurality of cathodes are made of the same

material.

9. A vacuum arc deposition apparatus according to Claim  
1, wherein said plurality of cathodes are made of different  
5 materials.

10. A vacuum arc deposition apparatus according to Claim  
1, wherein said plurality of cathodes are at least three cathodes  
where the cathodes of the same kind and of different kinds are  
10 mixed.